CLAIMS

1. A spray-coating device for a coating liquid, comprising a coating liquid spray gun (2; 102; 202) which contains a liquid feed valve (4) fitted with a liquid valve seat (6) and a liquid valve element (8) that is displaceable relative to said seat (6) between a closed and an open liquid valve position,

characterized in that

the spray gun (2: 102; 202) contains a measuring valve device (40; 140; 240) configured in a compressed gas measuring valve flow path (42) and is ganged to the liquid valve element (8) to implement joint displacement with it so as to be driven by said element (8), the measuring valve device (40; 140; 240) being designed in such a way that, depending on the positions of the liquid valve element (8) , it shall assume a closed position sealing off the compressed gas measuring valve flow path (42) when the liquid feed valve (4) assumes its fully closed position and when it assumes its fully open position, but shall always be in an open position keeping open the compressed gas measuring valve flow path (42) when the liquid valve element (8) assumes an arbitrary intermediate position between its fully open and its fully closed liquid valve positions, whereby, and depending on compressed gas flowing or not through the measuring valve (40), it may be automatically determined whether the liquid valve element (8) assumes one of the positions, namely open or closed liquid valve positions, or an arbitrary intermediate position.

2. Spraycoating device as claimed in claim 1, characterized in that the spray gun (2; 102; 202) is fitted with a compressed gas duct (30) applying compressed gas into the flow path of the coating liquid and in that the compressed gas measuring valve flow path (42) is branched off this compressed gas duct (30).

3. Spraycoating device as defined in one of the above claims,

characterized in that

the measuring valve device (40) comprises a measuring valve element (48; 148) which is linearly displaceable by the liquid valve element (8) within a valve chamber (62) between a compressed gas intake valve aperture (52; 152) at one chamber end zone and a compressed gas outlet valve aperture (54; 154) at the other valve end zone in order to alternatively close or open either of these two apertures (52; 54; 152, 154) and in that the compressed gas intake valve aperture (52; 152) and the compressed gas outlet valve aperture (54; 154) communicate with each other through a compressed gas flow path (60) which can be closed by the measuring valve element (48) alternatively by closing the compressed gas intake valve aperture (52) or by closing the compressed gas outlet valve aperture (54), each time one valve aperture being open while the other is closed, and vice-versa.

4. Spraycoating device as claimed in claim 3, characterized in that the measuring valve element (48) is mounted in a valve chamber (62) and is configured laterally apart from a valve chamber wall, the compressed gas flow path(60) being constituted by the spacing between the measuring valve element (48) and the chamber wall between the compressed gas intake valve aperture (52) and the compressed gas outlet aperture (54) on the opening side which can be sealed off by the measuring valve element (48).

5. Spraycoating device as claimed in claim 3, characterized in that the compressed gas flow path (148) between the compressed gas intake valve aperture (152) and the compressed gas outlet valve aperture (154) is constituted by a bypass to a valve chamber (162) wherein the measuring valve element (148) is linearly displaceable between the compressed gas intake valve aperture (152) and the compressed gas outlet valve aperture (154).

6. Spraycoating device as claimed in either of claims 1 and 2, characterized in that the measuring valve (240) comprises a measuring valve element (248) which is linearly displaceable within a valve chamber (262) by the liquid valve element (8) to which it is ganged to implement joint displacement, in that the measuring valve element (248) is a valve slider resting in hermetically sealing manner against the chamber lateral wall, in that a compressed gas intake valve aperture (252) and a compressed gas outlet valve aperture (254) are constituted in the lateral chamber wall and can be alternatively made to communicate with each other or be isolated from each other by the measuring valve element (248) depending on the axial positions of the liquid valve element (8), the two apertures (252, 254) being mutually separate flow-wise when the liquid valve element (8) assumes the fully closed liquid valve position or the fully open liquid valve position , however the two apertures (252, 254) communicating with each other flow-wise when the liquid valve element (8) assumes an arbitrary position between the said liquid valve positions.

7. Spraycoating device as claimed in at least one of the above claims, characterized by comprising a sensor (66) generating a signal depending on compressed gas flowing or not through the measuring valve device (40; 140; 240).

8. Spraycoating device as claimed in claim 7, characterized in that the sensor (66) is connected on the downstream side of the measuring valve device (40; 140; 240) to the compressed gas measuring valve flow path (42).

9. Spraycoating device as claimed in claim 8, characterized in that the sensor (66) is configured spatially apart from the spray gun (2; 102; 202) and is connected or connectable through a compressed gas line (68) to the compressed gas measuring valve flow path (42).

10. Spraycoating device as claimed in one of claims 7 through 9, characterized in that the sensor (66) is connected to a control unit (66) to drive the liquid valve element (8) relative to the liquid valve seat (6) as a function of the relative positions of objects to be coated and the spray gun (2; 102; 202).

11. Spraycoating device as claimed in at least one of claims 7 through 10, characterized in that the sensor (66) is a pressure sensor responding to the pressure of the compressed gas of the measuring valve device (40; 140; 240).

12. Spraycoating device as claimed in at least one of claims 7 through 10, characterized in that the sensor (66) is an acoustic sensor responding to acoustic noises in the compressed gas flow path of the measuring valve device (40; 140; 240).